PolyMet EIS Mercury Issues Meeting Themes & Consultant Notes
MPCA Duluth Offices
July 10, 2012

General Themes from the AM Session

1. The morning presentations provided background on mercury, starting broadly about mercury itself, the TMDL process and implementation steps, tribal water quality standards and research, and potential contributions from the PolyMet project if built. The presentations themselves should be referenced for specific information.
2. Mercury is a global issue and about 70% of mercury in the atmosphere is anthropogenic.
3. Fish in MN lakes and streams are contaminated with levels of mercury that poses a human health risk, virtually all of which is delivered by atmospheric deposition.
4. 90% of air depositional mercury in Minnesota comes from outside of the state (i.e., about 10% of mercury deposition in MN comes from sources within the state).
5. Methylmercury is the form of mercury that concentrates in fish.
6. Modeling methods supported by MPCA assume a direct, proportional relationship between the rates of airborne mercury deposition and fish tissue concentrations. This is because data indicate that mercury concentrations in fish in a given lake will likely be proportional to the load of atmospheric deposition of mercury (linear relationship). It was noted that although the airborne deposition/fish tissue concentration relationship is linear, how much MeHg is actually produced and bioaccumulates varies from lake to lake.
7. To achieve substantial reductions in mercury loading for MN, there must be better efforts to control emissions at the national and international levels, sources which far outweigh contributions from MN proper.
8. The process for development and implementation of State-wide mercury TMDL was explained. The TMDL implementation plan calls for a 93% reduction goal (789 lbs/yr) in atmospheric Hg deposition by 2025.
9. In order to comply with the statewide TMDL, the NorthMet Project will require mitigation of 4.6 pounds of annual airborne Hg emissions.
10. A draft mercury rule will be completed later in July 2012 and should be published for public comment in December 2012.
11. The St. Louis River TMDL process is currently underway (developing models, filling data gaps, etc.) and is separate from the statewide TMDL.
12. The cumulative effects analysis for cumulative mercury deposition focused on reasonably foreseeable actions within 25 km of the project (distance considered to be conservative). This recognizes that most direct airborne deposition occurs within 10 km of the source.

Cooperating Agencies - Tribal Perspectives

1. Subsistence living on fish
    - Grand Portage subsistence fish consumption is assumed to be 144 grams/day, which is approximately 5x higher than MPCA assumed fish consumption rate of 30 grams/day;
    - Fond du Lac's fish consumption rate is assumed to be 60 grams/day, which is 2x the MPCA assumed rate.
2. Elevated levels of Hg in fish in Grand Portage have been investigated.

3. Role of sulfate reduction effect on methyl mercury and impacts should be considered in terms of any new information since the DEIS.
4. Bioaccumulation is one of the most important tribal concerns.
5. Reports being finalized or used in SDEIS (e.g., MPCA 2006 strategy document; PolyMet/Barr 2010 MeHg Report) should be reviewed prior to use in the SDEIS.
6. No industrial source of Hg on Grand Portage Reservation – deposited by outside sources.
7. Mercury is driving the Fond du Lac standard, since it is the only factor high enough to trigger review.
8. Grand Portage fish consumption is year-long due to Lake Superior proximity, while the Fond du Lac rate is seasonally high and dependent on St. Louis River.
9. Lack of data (localized at site) on wildlife, plants, and people.
    a. Margaret Watkins (Grand Portage) provided a reference on monitoring at Grand Portage National Monument that included mercury concentrations in dragonfly larvae and fish – this data would help support permitting decisions. The following document was provided at the meeting: "Mercury in streams at Grand Portage National Monument: Evidence of ecosystem sensitivity and ecological risk."
    b. Nancy Schuldt (Fond du Lac) provided information on Fond du Lac's Environmental Program. The following document was provided at the meeting: "Water Quality, Air Quality, Mercury Studies."
10. Cliffs Erie closure plan – reissuance of existing permits must be consistent with the CWA.
11. Cumulative effects scope is too narrow – since Embarrass River and Partridge River watersheds are tributaries to St. Louis River Watershed. Disclosure in the SDEIS of potential cumulative impacts to the St. Louis River should be considered.
12. Cumulative mercury deposition process analyzed five lakes closest to site, but not extensive wetlands surrounding project.
13. Perspectives of MPCA mercury experts on Barr 2010 report were requested. Bands dispute the conclusions that the existing site conditions have no effect on Hg methylation. FDL comments on the report were submitted on May 31, 2012.
14. Any "pulse" of Hg from removal of overburden during mine startup should be addressed in the mercury mass balance.
15. The Tribal position is that the existing condition is impaired. More than TMDL will have to be done to address fish consumption impacts. Management on a landscape level of existing impacts was indicated as the primary concern. Simply maintaining the existing conditions is unacceptable.

Cooperating Agencies – USEPA Perspectives

USEPA did not offer any comment for additional Co-lead and consultant consideration.

Consultant Notes

Mercury is an important topic and will be addressed in the SDEIS. At a minimum, the following twelve (12) topics will be discussed in the document (please note that these topics are NOT presented in any kind of rank order):

a. Revised project—mercury balance, emission controls, mitigation measures, wastewater treatment removal efficiencies, etc.
b. Existing conditions/baseline data: additional water quality monitoring data and fish tissue data, and other wildlife or vegetation data

c. Fish consumption advisory and risk assessment information, subsistence impacts
d. Mercury methylation and bioaccumulation
e. Cumulative deposition and effects/impacts
f. Sulfate contribution to mercury and the interface
g. TMDL (statewide) and how NorthMet will comply as well as an acknowledgement of the St Louis River TMDL work
h. Impact criteria for mercury
i. Methodologies to assess mercury loadings and mass balance calculations
j. “No Action” alternative and its impact with respect to mercury
k. Cultural resources
l. Identification of uncertainties and variables